Mesa County Real-Time Virtual Reference Network (RTVRN) Login instructions.

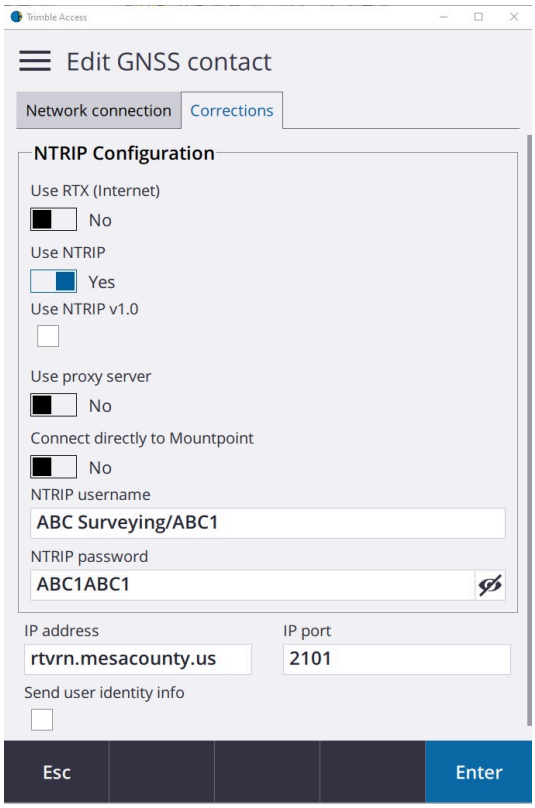
Login Instructions:

When logging into NTRIP, please use your organization name and username to access NTRIP. For example, an organization named "***ABC surveying***" with a username "***ABC1***" and NTRIP password "***ABC1ABC1***" should enter:

NTRIP username: ***ABC surveying/ABC1***
NTRIP password: ***ABC1ABC1***

You can log in to the server with just the username, but if someone has the same username under a different organization, it will not let either user log in to the system.
This cannot be changed and is how this system is meant to operate.

Below is an example of how to set this up in a Trimble TSC7 controller.



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MESA COUNTY RTVRN NTRIP MOUNTPOINTS:

Mesa County has the following NTRIP mountpoints for connection to the Real-Time Virtual Reference Network (RTVRN).

Mountpoint Names	Constellations Available	Data Format
VRS_CMR	GPS+GLONASS	CMR+
VRS_CMRx	GPS+GLONASS	CMRx
VRS_RTCMv3	GPS+GLONASS	RTCMv3.1
VRS_CMR_RTX	GPS+GLONASS	CMR+
VRS_CMRx_RTX	GPS+GLONASS+GALILEO+BEIDOU	CMRx
VRS_RTCMv3_RTX	GPS+GLONASS+GALILEO+BEIDOU	RTCMv3.4

Recommendations:
For older Trimble equipment, use the VRS_CMR or VRS_CMR_RTX
For older non-Trimble equipment, use VRS_RTCMv3
For newer Trimble equipment, use VRS_CMRx_RTX
For newer non-Trimble equipment, use VRS_RTCMv3_RTX

DATA FORMAT DEFINITIONS

CMR+

CMR+ stands for "Compact Measurement Record Plus." It is a proprietary format developed by Trimble for transmitting correction data in Real-Time Kinematic (RTK) applications within the Global Navigation Satellite System (GNSS). CMR+ is designed to provide accurate positioning information by transmitting differential corrections from a base station to a rover receiver. This format is commonly used in precision agriculture and other industries where high-precision positioning is required. CMR+ offers improved efficiency and data compression compared to its predecessor, CMR, allowing for faster initialization and more reliable performance, especially in challenging environments.

CMR+ is primarily designed to cater to legacy equipment within specific industry sectors, notably those where CMR+ has established itself as a quasi-standard format, such as precision agriculture. Given that CMR+ is a proprietary Trimble format, non-Trimble users are encouraged to opt for the RTCM 3.x format, unless they can verify that their device fully supports CMR+.

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CMRx

CMRx stands for "Compact Measurement Record Extended." It is a proprietary format developed by Trimble for transmitting Real-Time Kinematic (RTK) correction data in GNSS (Global Navigation Satellite System) applications. CMRx is designed to enable RTK users to utilize multiple satellite constellations and signals as they become available, leading to faster initializations and improved performance, especially in environments with obstructions or under canopies. One of the key features of CMRx is its significant compression capability, which reduces the amount of data transmitted compared to previous formats like CMR/CMR+. This compression helps users receive corrections within less bandwidth, optimizing communication efficiency in RTK systems. Trimble rovers that support CMRx are recommended to exclusively use this format for improved performance and compatibility.

RTCMv3

RTCM v3.4 refers to the Radio Technical Commission for Maritime Services version 3.4. It is a standard protocol used for transmitting differential correction data in real-time between a base station and a rover receiver in Global Navigation Satellite System (GNSS) applications. RTCM v3.4 is an updated version of the protocol that offers improvements and enhancements over previous versions. It defines the format and structure of messages exchanged between the base station and rover, facilitating more accurate positioning calculations by the rover receiver. This version may include additional features, optimizations, or adjustments compared to earlier iterations, aimed at enhancing the overall performance and reliability of GNSS positioning systems.

RTCM v3.1 stands for Radio Technical Commission for Maritime Services version 3.1. It is a standard protocol for transmitting Differential Global Navigation Satellite System (DGNSS) corrections over radio or internet connections. This protocol is widely used in Real-Time Kinematic (RTK) positioning systems to improve the accuracy of GPS positioning. RTCM v3.1 defines the format and structure of correction messages that are transmitted from a base station to a rover receiver, allowing the rover to calculate more precise positioning information.